



LUNG HEALTH SCREENING SURVEY AND PREVALENCE OF SMOKING AMONG COLLEGE GOING STUDENTS

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ABSTRACT

Introduction: College going students generally don't pay attention and neglect their routinely encountered health problems related to lungs. They don't even seek medical attention for the same. They start using tobacco either in the form of smoking or chewing at this age because they believe that smoking will boost their image and social acceptability from the peers.

Aim: To find out common signs and symptoms related to lung health and smoking prevalence among college going students.

Methods: Cross-sectional, Descriptive study, conducted among total 345 college going students (M – 210, F - 135) by self-administered questionnaire. The survey included questions regarding presence/absence of common signs and symptoms related to lung health and questions related to smoking habit.

Results: Among 210 male students, 10.95% current smokers, 5.71% ex-smokers and 6.19% Daily Cigarette Smokers. Among 135 female students, 2.96% current smokers, 2.22% ex-smokers and 1.48% Daily Cigarette Smokers. Among 23 male Current Smokers, 56.52% Cigarette user, 30.43% Bidi users and 13.05% Hookah users. 20% male and 20.74% female were always feeling tiredness. 16.19% male and 17.03% female had more breathlessness compared to same aged students. In male students, Presence of frequent cough (8.09%) and frequent sputum (9.52%), experience of chest pain (16.66%) and sudden weight loss (9.52%).

Conclusion: We must increase awareness and education regarding common lung health issues among college students in our society. Smoking prevention programmes and its education should be started at school level.

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INTRODUCTION

Tobacco is the leading preventable cause of death and disease in the world today. Each year, tobacco kills more people than HIV/AIDS, illegal drugs, suicides, murders, road accidents and fires combined. Tobacco kills 6 million people globally every year. Each Year 10 lakh Indians die due to tobacco related diseases. Every Day 2800 Indians die due to tobacco use. 275 million adults (i.e. 35%) in India use tobacco in some form or other. Tobacco kills up to half of its users. India is the 2nd largest Consumer of tobacco in the world, second only to China. 3rd largest Producer of tobacco in the world. 5th largest Exporter after Brazil, US, China and Malawi.^[1] Tobacco is addictive in ways similar to heroin, cocaine and alcohol. Tobacco use can lead to nicotine dependence and serious health problems. Experimentation with tobacco by adolescents and young people leads to dependence and chronic diseases in the productive years of their lives.

Young people are still growing. Their lungs don't reach full size until late teens for girls and after age 20 for boys. Adults who smoked during adolescence can have lungs that never grow to their potential size and never perform at full capacity. The lungs of young smokers don't perform as well as those of non-smokers. Because their lungs don't work as well, they are short of breath and may have more trouble participating in sports and other physical activities. Even though people who stop smoking will improve their health dramatically, early lung damage doesn't go away completely in most cases.^[1] Young adulthood is a critical transition period in cigarette use (Bachman Wadsworth, O'Malley, Johnson & Schulenberg, 1997; Chen & Kandel, 1995).^[2,3] Whereas first experimentation with cigarettes occurs early in life for the majority of individuals, increased frequency of smoking and establishment of regular or heavy cigarette use often occur during the young adult years (Everett, Husten *et al.*, 1999; Everett, Warren, *et al.*, 1999).^[4,5] Encouragement cessation of smoking in early life years helps individuals avoid many harms related to

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smoking(Doll, Peto, Boreham, & Sutherland,2004; Orleans,2007)^[6,7]

There are many reasons young people begin using tobacco.^[8]

- Social Influences
- Physical Influences
- Environmental Influences
- Media & Movies
- Tobacco Industries

There can be several reasons for respiratory symptoms in college going students

- Air Pollution- Major problem in big cities
- Infection- A serious concern among college students. Students live in small rooms and infections can occur easily throughout a dorm or campus.

Causes of Tiredness and Get out of breath compared to same age people in college going students

- Lack of Physical activity due to Digital Addiction- Excessive Mobile and TV use due to social media
- Stress and Anxiety- Particularly strong around exam time and they are also a major player in triggering a full blown chronic fatigue.
- Lack of Sleep- College students think staying up all night for exams or parties won't have an impact on their energy. Late night gossips and different class schedules can disturb the body's natural rhythm and make the body feel like jet-lagged all the time.
- Unhealthy and Irregular Eating Habits- Increased intake of junk food, Eating at Odd times, Overall diet low in nutrition

College going students generally don't pay attention and neglect their routinely encountered health problems related to lungs. They don't even seek medical attention for the same. They start using tobacco either in the form of smoking or chewing at this age. This study represents common respiratory symptoms encountered by college students in their routine life along with prevalence of smoking among students.

METHODS

Study Design

Cross-sectional Study, Descriptive Study

Study Setting

The study was conducted in a private university including students from variety of higher educational courses in the month of February 2017 at Gandhinagar, Gujarat. Permission for the study was taken from Institutional Research Committee and Institutional Ethics Committee.

Data was collected using a pre-tested, anonymous, self-administered questionnaire among total 345 college going students (M – 210, F - 135). Age : 17-22 Years.

The survey included questions regarding presence/absence of common signs and symptoms related to lung health and questions related to smoking habit inspired by Lung Health Checklist from Australian Lung Foundation and WHO Guidelines for Controlling and Monitoring Tobacco Epidemic.

The students were briefed about the purpose of the study. They were reassured about the anonymity and confidentiality of the

information. The collected data was tabulated using MS Excel and analysed.

RESULTS

- ✓ In the Present Study, there were 10.95% Current Smokers, 5.71% Ex-Smokers, 6.19% Daily Cigarette Smokers among male students (n=210) and 2.96% Current Smokers, 2.22% Ex-Smokers, 1.48% Daily Cigarette Smokers among female students (n=135).
- ✓ Among 175 male Never Smokers, 22.29 % had tried Smoking once only. Among 128 female Never Smokers, 30.47% had tried Smoking once only.
- ✓ Among 23 male Current Smokers, 56.52% were Cigarette user, 30.43% were Bidi users and 13.05% were Hookah users. Among 4 females, 2 were Cigarette Smoker and 2 were using Hookah.
- ✓ Reasons for Smoking in male and female students were Friends (56.52%), Exam Pressure (26%), Pleasure (17.39%) and in all 4 female students were pleasure only.
- ✓ Among 12 male Ex- Smokers, there were 58.33% Cigarette user, 16.66% Bidi users and 33.33% Hookah users. Among 3 females, 2 Cigarette Smoker and 1 using Hookah. Reason for quitting were awareness of ill-effects (66.66% male and in all 3 female students) and Parents (33%-male).
- ✓ Looking upon Lung Health Screening Survey, 20% male and 20.74% female students were always feeling tiredness and 16.19% male and 17.03% female students were feeling more breathlessness compared to same aged students.
- ✓ In male students, Presence of frequent cough (8.09%) and frequent sputum (9.52%), experience of chest pain (16.66%) and sudden weight loss (9.52%). In spite of these frequent signs and symptoms only 3.33% had sought medical attention for these. Female students had almost same results.
- ✓ There were frequent cough (8.69%), sputum (8.69%), breathlessness (21.73%), chest tightness or wheezing (4.34%), frequent chest infection (8.69%), chest pain (34.78%), tiredness (30.43%), sudden weight loss (8.69%) in Current Smoker Students, but none of them had seek medical attention for these problems.

Table 1 Prevalence of Smoking

Prevalence (%)	Current Smokers	Ex-Smokers	Never Smokers
Male(n=210)	10.95%	5.71%	83.33%
Female(n=135)	2.96%	2.22%	94.81%
	Never Smokers		
	Never Tried Smoking	Smoking Tried once only	
Male(n=175)	77.71%	22.29%	
Female(n=128)	69.53%	30.47%	

Lung Health Screening Survey and Prevalence of Smoking Among College Going Students

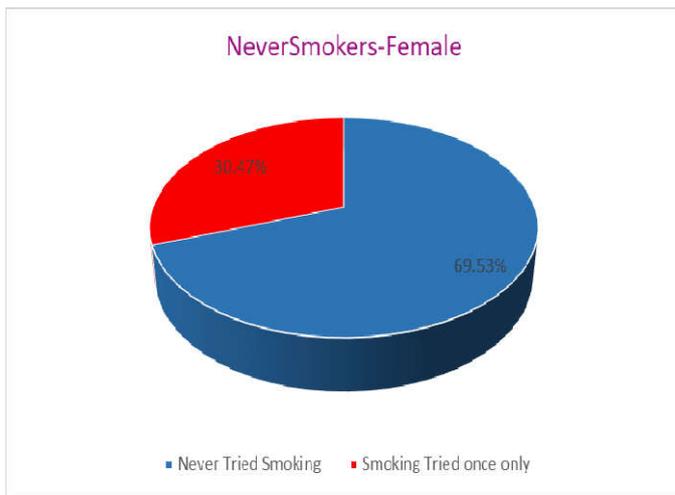
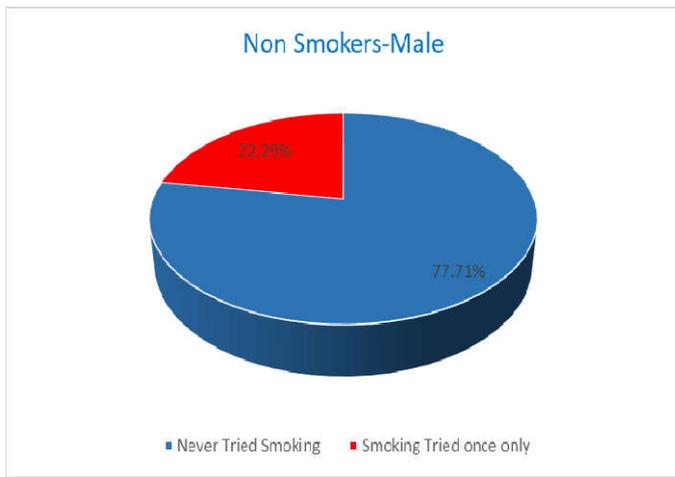
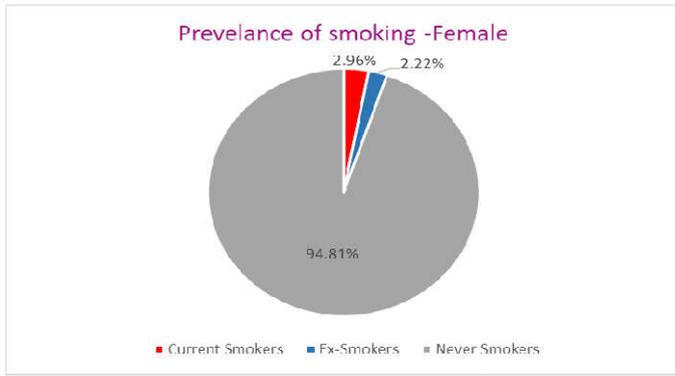
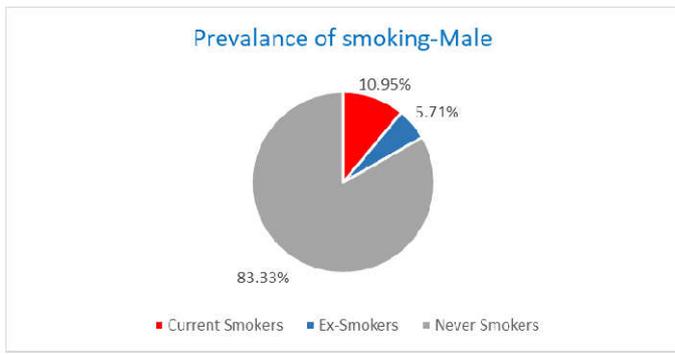


Table 2 Distribution of Current Smokers acc. to Smoking related Factors

Sr. No.	Factors	Male (n=23)	Female (n=4)
1	Use of Cigarette	56.52%	50%
2	Use of Bidi	30.43%	0
3	Use of Hookah	13.05%	50%

4	Average No. of Cigarette used daily	1.76	1
5	Average No. of Bidi used daily	2.10	0
6	Smoking started since(Average years)	1.91	1.5
7	Reason for Smoking		
	Friends	56.52%	0
	Exam	26%	0
	Pleasure	17.39%	100%
8	Ever experience difficulty in breathing, cough and irritation of airways, phlegm due to smoking	0	0
9	Ever seek medical attention or taken medicine for your respiratory problem	0	0

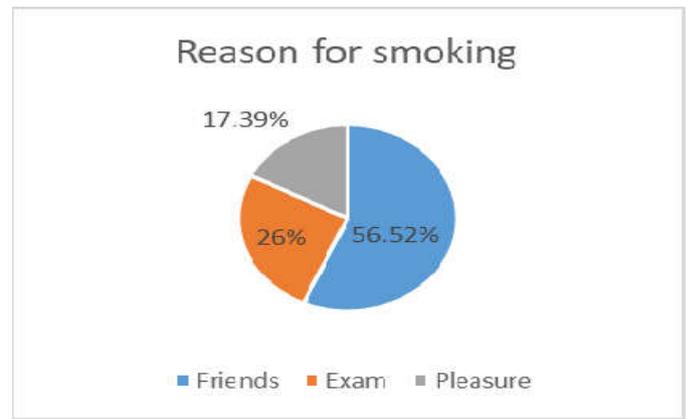
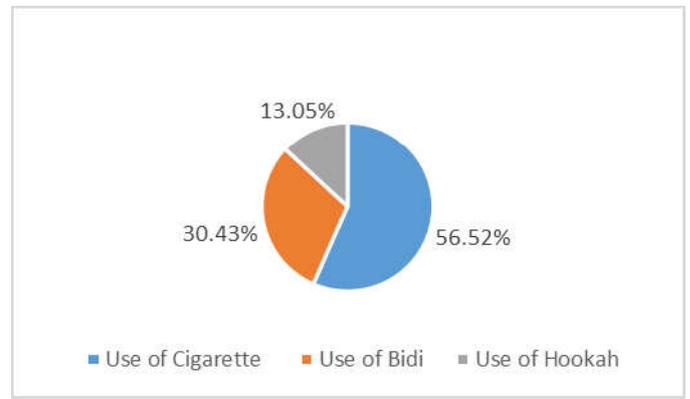


Table 3 Distribution of Ex-Smokers acc.to Smoking related Factors

Sr. No.	Factors	Male(n=12)	Female(n=3)
1	Use of Cigarette	58.33%	67%
2	Use of Bidi	16.66%	0
3	Use of Hookah	33.33%	33%
4	Average No. of Cigarette used daily	1.08	1
5	Average No. of Bidi used daily	2.50	0
6	Smoked for (Average years)	1.50	1
7	Quitted since(Average years)	1.30	1
8	Reason for quitting Smoking		
	Awareness on ill-effects	66.66%	100.00%
	Parents	33%	0
9	Ever experience difficulty in breathing, cough and irritation of airways, phlegm due to smoking	0	0
10	Ever seek medical attention or taken medicine for your respiratory problem	0	0

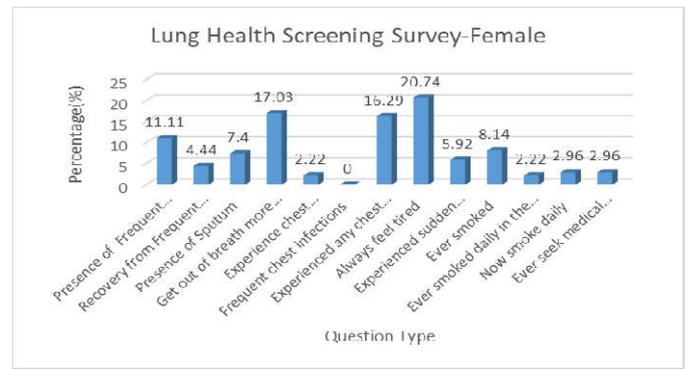
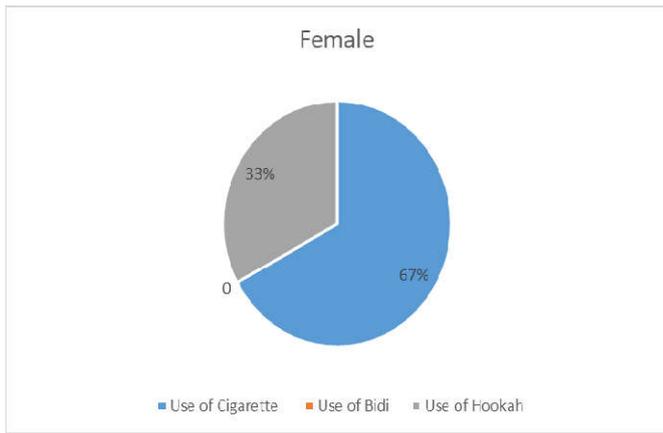
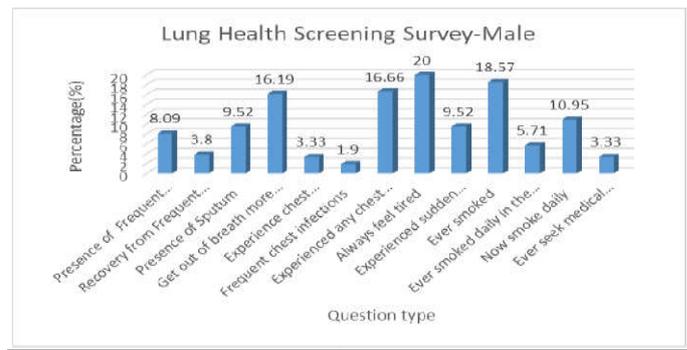
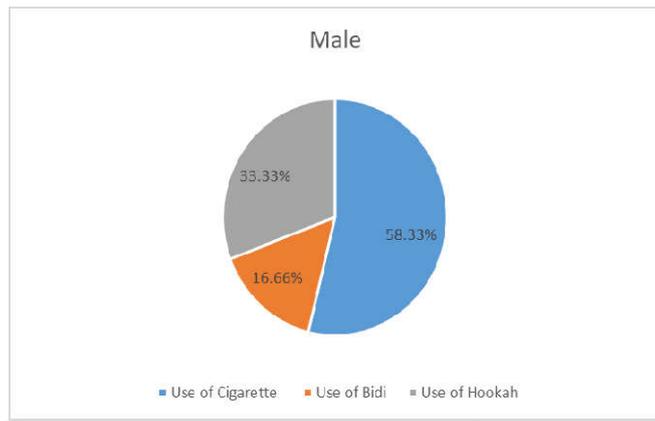


Table 5 Lung Health Screening Survey & Current Smokers

Question Type	Male(23)	
	YES	Percentage (%)
Presence of Frequent Cough	2	8.69
Recovery from Frequent Cough	0	0
Presence of Sputum	2	8.69
Get out of breath more easily than people your age	5	21.73
Experience chest tightness or wheezing	1	4.34
Frequent chest infections	2	8.69
Experienced any chest pain	8	34.78
Always feel tired	7	30.43
Experienced sudden weight loss	2	8.69
Ever seek medical attention or taken medicine for your respiratory problem	0	0

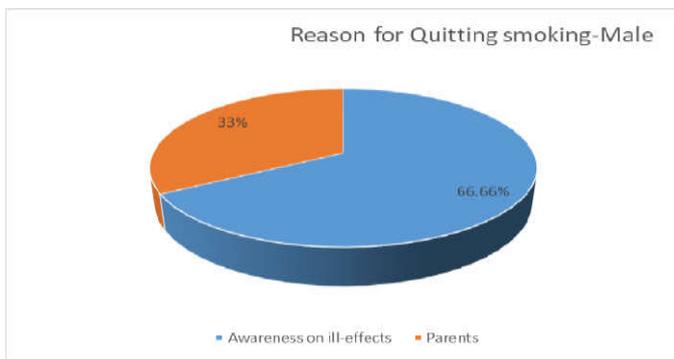
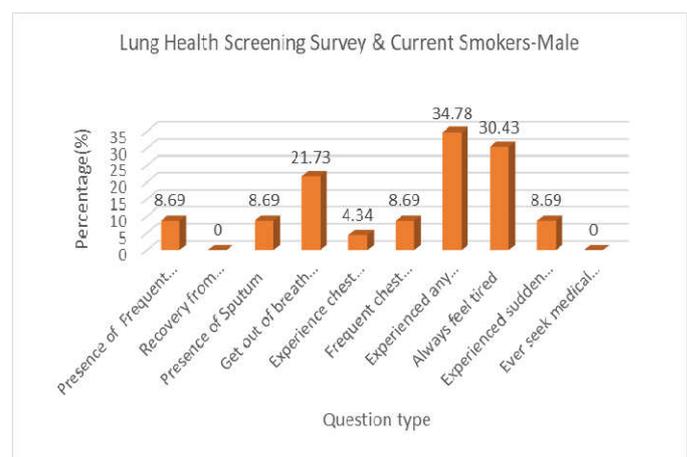


Table 4 Lung Health Screening Survey

Question Type	Male(210)		Female(135)	
	YES	Percentage (%)	YES	Percentage (%)
Presence of Frequent Cough	17	8.09	15	11.11
Recovery from Frequent Cough	8	3.8	6	4.44
Presence of Sputum	20	9.52	10	7.4
Get out of breath more easily than people your age	34	16.19	23	17.03
Experience chest tightness or wheezing	7	3.33	3	2.22
Frequent chest infections	4	1.9	0	0
Experienced any chest pain	35	16.66	22	16.29
Always feel tired	42	20	28	20.74
Experienced sudden weight loss	20	9.52	8	5.92
Ever smoked	39	18.57	11	8.14
Ever smoked daily in the past	12	5.71	3	2.22
Now smoke daily	23	10.95	4	2.96
Ever seek medical attention or taken medicine for your respiratory problem	7	3.33	4	2.96



DISCUSSION

Most young people don't consider the long-term health consequences associated with tobacco use when they start smoking. Because most high school smokers can't resist the powerful and addicting effects of nicotine, many will continue to smoke in adulthood. Among those who persist in smoking, one third will die about 13 years earlier than their non-smoking peers.^[1]

In the present study, we found 10.95% Current Smokers, 6.19% Daily Cigarette Smokers among male students (n=210) and 2.96% Current Smokers, 1.48% Daily Cigarette Smokers among female students (n=135).

WHO report on the global tobacco epidemic, 2017 in India from the latest survey results shows 18.3% Current Smokers, 6.3% daily Cigarette Smokers in male young adults and 2.4% Current Smokers, 0.6% Daily Cigarette Smokers in female young adults.^[9]

Studies done by Naresh R. Makwana *et al*, Ramakrishna GS *et al*, Babalola Faserua *et al*, Nawaz H *et al* showed nearer values of prevalence rates with present study as WHO report.^[10,11,12,13]

Studies done by Ganeshkumar S. *et al*, Rajiv K. Singh *et al*, Ranjeeta Kumari *et al*, Kofahi MM *et al*, Santosh Khude *et al* showed high prevalence rate than the present study.^[14,15,16,17,18] The reason for low prevalence rate can be under response/hiding facts due to high social stigma.

In present study, Among 175 male Never Smokers, 22.29 % had tried Smoking once only. Among 128 female Never Smokers, 30.47% had tried Smoking once only. They are more prone to become Occasional Smoker and eventually Daily Smoker. Young people are easily influenced by marketing than adults. They are also more willing to take risks, even with their health.^[8,19]

Among 23 male Current Smokers, 56.52% were Cigarette user, 30.43% were Bidi users and 13.05% were Hookah users. Among 4 females, 2 were Cigarette Smoker and 2 were using Hookah.

Kiran rami *et al* found that Cigarette Smoking was more common followed by Hookah and Bidi among college going students.^[20]

Reasons for Smoking in male and female students were Friends (56.52%), Exam Pressure (26%), Pleasure (17.39%) and in all 4 female students were pleasure only. When smoking is portrayed as a social norm among others who are seen as cool, sophisticated, rebellious, or fun-loving, teens often respond by copying the behaviour and trying cigarettes themselves. If their friends smoke, or their siblings smoke, they are even more likely to smoke themselves.^[8,19]

In studies by Ganeshkumar S. *et al*, Kofahi MM *et al*, Santosh Khude *et al*- Friends were the most influencing factor for smoking in college going students.^[14,17,18]

In studies by Ward *et al*. and Smith-Simone *et al*. showed that most of the shisha users started with friends in café restaurants. Curiosity and peer pressure were cited as the main reasons for the initiation and popularity of hookah smoking along with its use having become fashionable.^[21,22]

Several studies like Maziak *et al*. and Mohammed *et al*. have shown that hookah smokers were significantly more likely to have hookah smokers as friends.^[23]

We found 5.71% Ex-Smokers in male students and 2.22% Ex-Smokers in female students. These results confirms that prevalence of Ex-Smokers will be low in young, college going students, as they start smoking in this age generally and becomes addicted compared to adults.^[9]

Among 12 male Ex- Smokers, 58.33% were Cigarette user, 16.66% were Bidi users and 33.33% were Hookah users. Among 3 females, 2 were Cigarette Smoker and 1 was using Hookah. Reason for quitting were awareness of ill-effects (66.66% -male) and in all 3 female students and Parents (33%-male).

Andrea C Villanti *et al* found that the two most popular reasons for quitting smoking were physical fitness (64%) and the cost of tobacco (64%).^[24]

E. A. Pinsker *et al* found that Social stigma influenced students to quit smoking.^[25]

Wilson Paloschi Spiandorello *et al* found among the university students evaluated, there was a phase, classified as precontemplative or contemplative, during which they were refractory to smoking cessation programs. Although all of the students were aware of the diseases caused by smoking, 41.5% did not consider themselves addicted.^[26]

The most important motivations to quit smoking in this sample were an immediate reinforcement, social pressure and self-control. The analysis of motivations will help to orient smoking cessation programs.^[27]

Joyce M. Wolberg *et al* found that the majority of college student smokers plan to quit by the time they graduate.^[28]

Amanda J. Wells found that the most popular answer was to quit for health followed by to quit for money.^[29]

Gallus S *et al* found that 43.2% of ex-smokers mentioned a current health condition as the main reason to stop smoking, 31.9% stopped to avoid future health problems, 6.3% stopped because of pregnancy or child birth, 4.0% because of imposition by the partner/family, 3.7% because of a physician's recommendation, 3.0% because of the economic cost, 0.5% because of smoking bans, and 4.6% because of other reasons. There were different reason found to quit smoking according to sex, age, social class, and smoking history. Ex-smokers quit mainly because of tobacco-related disorders. Only few ex-smokers quit to avoid future disorders.^[30]

Looking upon Lung Health Screening Survey, 20% male and 20.74% female students were always feeling tiredness and 16.19% male and 17.03% female students were feeling more breathlessness compared to same aged students. Presence of frequent cough and sputum, experience of chest pain and sudden weight loss in male students were 8.09%, 9.52%, 16.66%, 9.52%. In spite of these frequent signs and symptoms only 3.33% had seek medical attention for these. Female students had almost same results.

The National Asthma Control Task Force, Canada and Ministère Services Québec found that young adults are more frequently affected by some respiratory diseases than children and the elderly, with symptoms of asthma and allergic rhinitis reaching their highest prevalence (6% and 22%) at 15–19 and 25–44 years of age, respectively.^[31,32]

Kilpelainen *et al*, Johnson *et al* and their colleagues found that Bacterial respiratory infections and recurrent viral respiratory infections are also very frequent in young adults.^[33,34]

Kristin L. Nichol *et al* and his colleagues found that Colds and ILIs (influenza like illness) were common and associated with substantial morbidity in university students.^[35]

Mogabgab WJ found that College and university students may be at increased risk for URIs, and outbreaks with high attack rates have been reported.^[32,33,34,36]

The survey conducted by Fortis Healthcare found that around 53 percent of students were facing respiratory health issues while 51 percent had aggravated symptoms during the five days over which the survey was conducted in Delhi college students due to pollution.^[37]

Asa Neumana *et al* found that symptoms related to anxiety and especially depression are important determinants for the development of dyspnoea.^[38]

V. N. Shah *et al* found that the most common health problems related to tobacco consumption ever faced by the students were repeated mouth ulcers (15.9%), followed by repeated attacks of cough (9.6%), breathlessness (6.1%).^[39]

We found frequent cough (8.69%), sputum (8.69%), breathlessness (21.73%), chest tightness or wheezing (4.34%), frequent chest infection (8.69%), chest pain (34.78%), tiredness (30.43%), sudden weight loss (8.69%) in Current Smoker Students, but none of them had seek medical attention for these problems.

Several studies by Flay *et al.* and Leventhal *et al.* have identified concerns over health consequences as an important factor in preventing the initiation of smoking^[40,41] as well as an important motivator for young adult smokers who are considering quitting^[42-47]. Unfortunately, children and adolescents who smoke tend to discount the health effects of smoking, often believing that they will quit prior to experiencing these consequences^[48].

Lawrence C. An *et al* found an association between occasional and intermittent smoking and self-reported symptoms of cough and shortness of breath among young adult smokers. Smoking on at least 5 days in the prior 30 days increased the odds of experiencing shortness of breath or fatigue with regular activities even after accounting for these factors.^[49]

In their study of college smokers, Lipkus and Prokhorov documented a 15-year increase in "lung age" related to daily cigarette use.^[50]

Prokhorov AV *et al* and Warneke C found that Respiratory symptoms were most frequent among current smokers and least frequent among never smokers in college students. A higher prevalence of reported respiratory symptoms was associated with being in later stages of readiness to change.^[51] Arcavi *et al* and Benowitz *et al* found that the higher rate of reported health symptoms among smokers could be due to an increase in the rate of acute respiratory illness. Cigarette smoking is well recognized to increase the susceptibility to bacterial and viral infections.^[52]

Dye *et al* and Adler *et al* found that exposure to cigarette smoking damages the lining of the respiratory tract, reduces mucociliary clearance, and impairs both humoral and cellular immune responses.^[53]

Pastor *et al*, Medley *et al* and Murphy *et al* found that Smoking increases the odds of developing pneumococcal pneumonia in otherwise healthy adults (i.e., with no chronic lung disease).^[54]

Blake *et al*, Abell *et al*, Stanley *et al* found that Smokers also may be at increased risk(50%) of viral respiratory infections

such as the common cold and influenza. compared with non-smokers.^[55]

Moritsugu *et al* found the association between symptoms of shortness of breath and exposure to cigarette smoke.^[56]

CONCLUSION

We must increase Awareness and Education regarding common lung health issues among college going students including Physical Fitness, Healthy Diet in our society. Smoking Prevention Programmes and its Education should be started at school. If students don't start using tobacco by their early twenties, they may never start in later age. Smoking or use of other tobacco products must be considered as Exception, not the Norm. Students who quit before their thirties, may reverse the damage caused by tobacco use. College students are always Prime Candidates for Smoking Cessation as they are into their transitory phase of future and their brains are still developing. So many students become dependent on tobacco after using it for only a short duration. Quitting is difficult, but someone can do it with their sincere efforts. Real Stories and Experiences of those who failed in quitting but didn't give up can motivate people who can be the best candidates for quitting.

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